

Numbers, Numbers, Numbers: The Role of Population Studies in Social Studies and Global Education

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ABSTRACT. Population trends—birth and death rates, immigration patterns, sex ratios, and life expectancies—are one of the most important issues facing the international community. These trends’ relationship to the world economy, the environment, and developing countries’ ability to meet the needs of growing populations is a topic appropriate for the social studies classroom. Moreover, population trends are strongly correlated with other vital issues in international relations, such as world hunger, the spread of infectious diseases, the vitality of numerous political and religious movements, and the development of democracies throughout the world. The study of population is directly linked with all of the social studies, in addition to science, technology, mathematics, and the humanities. Therefore, designing lesson plans centered on population issues is an excellent way to fuse the social studies with other disciplines and show students the

connections between the social and natural sciences and the direct relevance of these sciences to their lives.

Keywords: environment, politics, population studies

Confucius, writing in the sixth century BC, when the world population was about 100 million people (consider that just *one* country—Mexico—had 108 million people in 2006 [Population Reference Bureau 2006]), asserted that “excessive growth may reduce output per worker, repress levels of living for the masses and engender strife” and that “mortality increases when food supply is insufficient; that premature marriage makes for high mortality rates[;] that war checks population growth” (qtd. in Neurath 1994, 6). The ancient Greeks, aware that Greece was a small country characterized by limited natural resources, were also concerned with population growth rates and densities. Aristotle was afraid that uncontrolled population growth would increase poverty and social misery and incite the suffering masses to engage in seditious behavior. Simultaneously, Aristotle pondered the optimal size of city-states and calculated that forty thousand people (citizens, noncitizens, and slaves) would be a small enough population for com-

petent administration and a large enough population to successfully defend itself from attack by competing city-states (Neurath). While the scientific study of demographic trends can be traced to the seventeenth century, interest in population trends can be found at the beginning of recorded history, when societies were concerned with the ways population trends affected the tribe or group’s survival and well-being (Daugherty and Kammeyer 1995; Diamond 1999; Ehrlich 1968; Kotlikoff and Burns 2004; Traphagan and Knight 2003).

In 2008, with the world population at more than 6.5 billion people (Population Research Bureau 2006), population trends and their relationships to economic development, world hunger, the global environment, international relations, domestic political/military power, and important cultural developments remain critical issues in world affairs and global education (de Blij and Muller 2005; Diamond 1999; Diaz, Massialas, and Xanthopoulos 1999; Rourke 2007; Sachs 2005; Simon 1981). Population issues provide social studies educators with ample opportunities to design interdisciplinary lessons that meet didactic, reflective, and affective goals and objectives. Moreover, the study of population allows teachers to incorporate several of

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the National Council for the Social Studies' (NCSS 2004) major themes, such as geography, history, civics, sociology/anthropology, economics, politics, and global connections, into math, science, and technology in ways that stimulate student interest in global and domestic issues.

A comprehensive study of population issues will allow students to see the sym-

by individuals, groups, and government officials responding to changing economic, political, environmental, technological, and social conditions. Moreover, population and socioeconomic trends in other countries are directly linked to American foreign policies and migration patterns that are transforming the ethnic and racial composition of the United States, as well as our politi-

provoke student interest in any topic, and thus direct their attention to politics and public policies, is to demonstrate direct relevance to their lives, future careers, and economic security.

Population Studies and Economics: The Social Security System

One interesting and provocative way for teachers to stimulate student interest in demography is to tell them they may have to work more hours and pay higher social security and income taxes to help support the 77 million aging "baby boomers" (the mega-generation born between 1946 and 1964) who will require a plethora of social and medical services as they begin to retire in 2010. In the early years of social security, there were ten workers for every retiree; by 2010 the ratio will be two workers for every retiree (Dye 2005). Young people entering the workforce have a vested, if not recognized, interest in social security's future. This controversial opening statement can lead to individual projects, lectures, or class discussions based on the following questions:

1. Name a few important social and political factors that led to the passing of the 1935 Social Security Act.
2. How has the dramatic increase in life expectancy (it was sixty-one in 1935 and about seventy-eight in 2007) impacted the social security system?
3. Should the government encourage higher birth rates or increased immigration patterns to enlarge the working population?
4. Explain why changing the social security system is controversial, especially among senior citizens.
5. Is it the government's responsibility to provide social security to all citizens?
6. Develop three viable solutions to the social security "crisis."
7. Do you believe it is fair that your generation will have to support the baby boom generation?
8. Analyze how the aging population will impact specific occupations and industries, such as health care and hospitality.

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biotic relationships between the physical world and economic activities, government policies, and international institutions and their role in determining population trends, economic development, and political affairs. By acquiring a deeper understanding of historical and current population trends and their implications, students will develop a more sophisticated view of history and contemporary world affairs, which will enhance their ability to see the natural relationships between the social sciences, the natural sciences, and technology.

It is important that students be able to analyze and evaluate demographic data to understand the political, socioeconomic, and cultural conditions in developing countries, as well as in the United States and other developed nations (Kotlikoff and Burns 2004). Furthermore, studying population trends will help students develop and refine important skills, such as critical thinking (population trends and their implications are the subject of considerable controversy), evaluating moral issues (infanticide, abortion, and family planning programs are fraught with moral and religious perspectives), analyzing demographic variables (such as birth rates and infant mortality rates), and reading and interpreting maps, graphs, and charts. Demographic changes are the results of intentional choices made

cal culture and economic development (Daugherty and Kammeyer 1995; Kotlikoff and Burns 2004; Pack 2002).

All demographic trends are intricately linked to political, economic, environmental, cultural, moral, and religious issues that generate enormous challenges and controversies, both domestically and internationally. These challenges provide social studies educators with excellent opportunities to create powerful lessons that capture students' interest and relate to their lives. This article will provide educators with some teaching suggestions that incorporate several of the social studies disciplines, as well as science, technology, and mathematics.

Teaching about Population Issues in Social Studies Classrooms

The study of population is directly linked with the social studies, in addition to science, technology, mathematics, and the humanities. Therefore, designing lesson plans centered on population issues is an excellent way to fuse the social studies with other disciplines and show students the connections between the social and natural sciences. Moreover, these lessons can show students that demographic trends will play a central role in their lives and future careers, as well as larger political, economic, and cultural trends. A surefire way to

9. How will the age structure of the population affect your prospects for education, employment, and social security?

Each of these questions will require students to engage in critical thinking, perform research, and confront important political and moral issues, such as the ideals of justice, equality, civic participation, and individual versus governmental responsibility for economic wellbeing. Furthermore, students will begin to see that demographic trends are central to their lives and are intimately linked to the political and economic security of the United States.

Demography: The Role of Diseases in History

Another very interesting demographic topic revolves around diseases and their impact on human civilizations, specifically the economic, political, and social consequences of diseases on affected countries or regions or on the planet. Diseases such as smallpox (possibly the most deadly disease in history), influenza, malaria, measles, the bubonic plague, and many others have played a major role in history—the decline of African societies ravaged by HIV/AIDS, the devastation of fourteenth-century Europe by the Black Death, the 1918 influenza epidemic that killed about fifty million people, and the decimation of millions of peoples lacking immunity to infectious diseases—and should be given a thorough examination in social studies courses (Barry 2004; Diamond 1999).

HIV/AIDS, because of its notoriety, will be of particular interest to adolescents. Educators can design several interesting, controversial, and thought-provoking lessons for students in geography, sociology/anthropology, economics, and government classes about this dreaded disease. Several organizations, such as the Centers for Disease Control (CDC), the National Center for Health Statistics, and the United Nations, provide basic information about HIV/AIDS, and the Population Reference Bureau provides detailed lesson plans (including materials, handouts, and links to

other resources) for middle and secondary school teachers.

The following activity is an excellent approach to teaching students about HIV/AIDS (or the role of any major disease in history) and incorporates all of the NCSS themes.

Divide the class into groups of five or six students and assign each group a research project (to be presented in class in the form of a PowerPoint presentation) that examines one of the following issues:

1. Trace the history of HIV/AIDS. When did the disease begin? How did it develop? Where did it originate? How did it spread to the United States?
2. Describe the demographic impact of HIV/AIDS on sub-Saharan Africa. How many people have died since the epidemic began in the 1980s? Why has Africa suffered significantly higher mortality rates? How have children been impacted by this disease? Analyze the economic impact on African countries. What cultural practices have contributed to the spread of HIV/AIDS?
3. Explain the programs created by the international community (the United Nations, the Red Cross, Doctors Without Borders) and the private sector (medical research and treatments) to combat the disease in the developing world. Critique three African governments' responses to the AIDS crisis (South Africa, Zimbabwe, and Nigeria are excellent case studies).
4. Design a graph or map showing the extent of HIV/AIDS infection in the United States. Identify the morbidity (sickness) and mortality (death) rates for the country. What states or cities are most impacted by the disease? Why do racial/ethnic minorities have higher rates of HIV/AIDS? How has the United States responded to the AIDS crisis?
5. Compare and contrast the HIV/AIDS pandemic with the fourteenth-century Black Death. What impact did each disease have on the economy and social order? What are the similarities? What are the differences? Students should consider the causes of the diseases; the modes of transmission; the impact on individuals,

communities, and countries; the level of medical knowledge and technology at the time; access to treatment and education; and the response of governments and other institutions.

6. Describe the psychological impact HIV/AIDS has on victims and their families and create a program to reduce the spread of this disease. This could include interviews (obviously, this must be achieved with sensitivity and respect for individual and family rights), a focus on education, a discussion of the government's role in dealing with this disease, and a discussion of personal responsibility.

Population Trends: Poverty and World Hunger

Another topic that fuses demographic trends, the social studies, and notions of morality, social justice, and equality is the relationship between population and world hunger. In 2006, 3.4 billion people—roughly 53 percent of the world's 6.5 billion people—lived on two U.S. dollars a day or less and were often denied access to clean water, adequate shelter and sanitation, health care, education, and food (Population Reference Bureau 2006). As a result of this extreme poverty, twenty-four thousand people die from hunger or related diseases (measles, diarrhea, and pneumonia) every day; almost six million of these people are children (Bread for the World Institute n.d.; Population Reference Bureau 2006; Sachs 2005).

Charles Darwin, writing in *The Voyage of the Beagle* in the 1830s, asserted, "If the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin" (qtd. in Gould 1996, 19). Having students debate the validity of this quote would be an excellent introductory activity to the study of population growth, poverty, and hunger. In addition, students will be intellectually and emotionally engaged in this topic, because the death of twenty-four thousand people a day from hunger tends to provoke moral outrage (once students are aware of this fact) and could goad students into taking action to combat hunger and poverty. When developing class

activities, lectures, discussions, Power-Point presentations, or research projects, teachers should focus on the causes of poverty, the consequences of hunger in developing world countries, the population debate (scholars disagree regarding population growth's relationship to poverty and hunger), and concrete actions and programs to eliminate hunger.

The following questions/objectives are bound to stimulate student interest in the relationships between hunger, poverty, and politics:

1. Explain the major causes of world hunger. (It is important that students understand that the world produces more than enough food to feed all 6.5 billion people annually. Class activities should focus on the root causes of hunger—political powerlessness and extreme poverty.)
2. Since almost 98 percent of hungry people live in the developing world, what actions should developed countries take to combat hunger and poverty?
3. Would establishing democracies in developing countries eliminate the root causes of hunger?
4. Describe the relationships between the environment and food production.
5. Why do the deaths of almost nine million people a year from hunger not receive intense media coverage?

Population Trends and American Democracy

Many students are interested in the relationship between population patterns and the political process; the relationship is important for students to understand, given that majority rule is central to a viable democracy. The controversial 2000 presidential race between George W. Bush and Al Gore highlighted the importance of population patterns in determining the outcome of the race. Teachers can use a U.S. population map to teach students about the differences between the popular vote and the Electoral College—a critically important but little-understood institution—and their roles in electing the president.

The country's profound demographic transformation since 1965 (new immi-

gration laws have resulted in a rapid growth of the Hispanic population, and, to a lesser extent, the Asian population) is having an impact on local, state, and national elections. For example, the Hispanic population (which is increasing its political organization and civic participation) generally votes for Democratic candidates and supports many, but not all, liberal programs. Students need to understand that population trends—birth and death rates, life expectancy, infant mortality rates, levels of education, income levels, and immigration patterns—vary according to race, ethnicity, and social class and are inexorably linked with politics in America, as well as each of the social studies.

As one can imagine, the possibilities for teaching about population issues and their connection to the NCSS curriculum standards, as well as the relevance of demographic issues to secondary and middle school students, are virtually infinite. In the following section, I demonstrate the direct links between population studies and eight of the ten NCSS curriculum standards, and teachers can formulate numerous engaging activities based on the questions presented under each standard. In addition, I provide some important organizations and their Web sites that provide a wealth of materials, lesson plans, and activities for social studies teachers.

Population Studies and the NCSS Curriculum Standards

For each of the following NCSS curriculum standards, there are three questions/objectives that can be the basis for lectures, class discussions, debates, projects, and research papers. Teachers can first introduce the topic of population studies by defining key variables and terms (these are defined in the 2006 World Population Data Sheet, which can be downloaded by going to the Population Reference Bureau's Web site at <http://www.prb.org/>) and describing current trends in population changes. Then, depending on their timeframes and other considerations, they can create lesson plans for one or two weeks based on the following questions or objectives.

I. Culture

1. Why do major religions, such as Islam and Christianity, take pro-fertility stances?
2. Are population control methods (these could include contraception, infanticide, sterilization, and abortion) moral?
3. Why are large families valued in many cultures?

II. Time, Continuity, and Change

1. Describe and explain the history of U.S. population growth.
2. Analyze the eugenics movement in the United States or Nazi Germany.
3. Why did world population increase so dramatically—from 1.7 billion in 1900 to 6 billion by 1999—in just one century?

III. People, Places, and Environments

1. Explain why Europe's population is declining, while Asia's population is increasing.
2. Analyze the impact of geographic factors—location, climate, topography, soils, and natural resources—on population trends in the United States (or some other country).
3. What is the impact of population growth on China's environment?

V. Individuals, Groups, and Institutions

1. Evaluate the United Nations' positions on population trends in the developing world.
2. How can institutions such as Planned Parenthood or the Roman Catholic Church influence attitudes about population trends and morality?
3. How do minority groups protect their rights in democracies?

VI. Power, Authority, and Governance

1. Should the government be involved in family planning? Why or why not?
2. Why was distributing contraceptives a crime in the United States (prior to the 1960s judicial decisions that overturned these laws/policies)?
3. Evaluate the immigration laws of the United States and recommend changes based on your perceptions of what is in our nation's best interests.

VII. Production, Distribution, and Consumption

1. Why do people who live in rural areas have more children than people who live in urban areas?
2. What is the relationship between population size, its age structure, and economic development?
3. What policies, if any, should a government create to help its poor citizens?

VIII. Science, Technology, and Society

1. What scientific advances have contributed to longer life spans?
2. Discuss three specific advances in agriculture that have dramatically increased the food supply.
3. Why hasn't technology benefited some countries in the developing world?

IX. Global Connections

1. What is the nature of the relationship between developed countries and the developing countries?
2. How do differences in population impact a country's military capabilities?
3. How do population trends in North Africa and Asia impact Europe?

All of these questions or objectives involve acquiring knowledge, using critical thinking skills, interpreting data (spatial and quantitative), and making judgments and creating policies based on values, beliefs, and attitudes. Powerful social studies lessons will engage students in complex issues that will impact their lives; it is not difficult to demonstrate how population issues—immigration, family planning services, environmental issues, vast income differences between groups or countries, the future of social security and health care in an aging America, job losses in some states, and political power (majority rule)—are relevant to students. Furthermore, population issues are saturated with controversies, and this should stimulate their passions and spur them into looking at these issues from a wide variety of personal and cultural perspectives; this has been one of the major goals of multicultural and global education (Banks 2006).

The appendix provides demographic data selected from the 2006 World

Population Data Sheet (Population Reference Bureau 2006) regarding six countries, which were selected because of their socioeconomic, political, geographic, and cultural diversity. The six questions that follow require students to interpret the data and formulate viable theories that explain the differences among countries. This process, because understanding current conditions within and between countries often calls for historical background, may require students to engage in research using libraries, the Internet (e.g., the U.S. Census Bureau Web site at <http://www.census.gov/>), and other sources.

In addition, students can access the Geographic Information Systems Web site (<http://www.gis.com/>) or the National Atlas of the United States (<http://www.nationalatlas.gov>) to create their own maps that show a wide variety of population trends. Students, using computer technologies, can create a dynamic PowerPoint presentation—complete with maps, sounds, photographs, graphics, charts, tables, and text—that appeals to visual and audio learners and stimulates interest in demography and its associated disciplines. The NCSS Web site (<http://www.ncss.org/>) also provides resources on population and related issues, including coverage in its journal *Social Education*.

Finally, because population studies is highly interdisciplinary, teachers are free to use their creativity to devise interesting activities that all students will enjoy; it is likely that *some* aspect of population studies—age structure, fertility and mortality rates, race, resources, health care, migration, population control measures, government policies, environmental impacts, and so forth—will appeal to most, if not all, students. In addition to the resources used in this article, a Google search—typing in the word *population*—revealed 251 million sites; there is no shortage of resources, information, teaching materials, and activities. Teaching about population issues in social studies classes is an excellent way to fulfill important NCSS goals and objectives and arouse student interest in relevant social studies topics. Demographic trends, which should not be interpreted as mankind's inevitable destiny, are central to understanding domes-

tic and world politics, environmental and economic issues, and social and cultural developments. Thus, social studies teachers should incorporate population studies into history, government, economics, sociology, geography, and global education courses.

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APPENDIX

POPULATION DATA AND SOCIOECONOMIC CONDITIONS IN SELECTED COUNTRIES, AND RELATED QUESTIONS FOR STUDENTS

Country	2006 population (millions)	Life expectancy* (in years)			Infant mortality rate**	Population living below U.S. \$2 per day (%)	Rate of natural population increase per year (%)	Total fertility rate***
		M	F	T				
Nigeria	134.5	43	44	44	100	92	2.4	5.9
Pakistan	165.8	61	63	62	79	74	2.4	4.6
Brazil	186.8	68	76	72	27	21	1.4	2.3
China	1,311.0	70	74	72	27	47	0.6	1.6
United States	299.0	75	80	78	6.7	—	0.6	2.0
Switzerland	7.5	79	84	81	4.3	—	0.2	1.4

Source. 2006 World Population Data Sheet (Population Reference Bureau 2006).

*M denotes male, F denotes female, and T denotes total.

**Infant deaths per 1,000 live births.

***Average number of children born to a woman during her lifetime.

Questions for Students

1. Which country had the largest population in 2006?
2. How many children will the average woman give birth to during her childbearing years?
3. In all six countries, women live longer than men. Identify three reasons that could explain this fact.
4. Compare the infant mortality rates in Nigeria and Switzerland. What inferences can you make about the socioeconomic conditions in the two countries?
5. Name the two countries that are experiencing the fastest population growth.
6. Which country seems to have the most socioeconomic problems? Why?

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